

Remarks:

Claim Rejections Based On 35 U.S.C. §102:

Applicant respectfully cancels pending Claims 1 through 3 in light of the prior art cited by the Examiner. Applicant concurs that such claims, as currently written, would not be allowable in light of U.S. Patent No. 6,148,923 to Casey (the “‘923 Patent”).

Claim Rejections Based On 35 U.S.C. §103(a):

1. Applicant respectfully disagrees with the Examiner’s assertion that “it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Casey by including a notched wiper element as taught by Haggard in order to have a wiper element which permits substantial flexing.”

To establish a *prima facie* case of obviousness, three basic criteria must be satisfied: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) all of the prior art reference (or references when combined) must teach or suggest all the claim limitations. See, MPEP § 2142- 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Further, where a proposed modification of the prior art would change the principle of operation of the prior art invention, then the teachings of the prior art references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810; 123 USPQ 349 (CCPA 1959).

In the present case, the proposed modification - that is, inclusion of notches in the wiper element - would completely render the device disclosed in the '923 Patent unsatisfactory for its intended purpose. As set forth in several places in the '923 Patent, the sealing rings of the device must form a pressure seal against the pipe. Such references include, but are not limited to, the following:

- (Col. 3, Lines 23-29) Preferably, the outer diameter of the flapper sealing ring has an interference fit with production string tubing of the gas well; In one aspect, the outer diameter of the flapper sealing ring is between about 2% to about 8% larger than the inner diameter of production string tubing of the gas well. In another aspect, the flapper seal comprises a width to thickness ratio within a range of from about 0.10 to about 0.20.
- (Col. 4, Lines 22-31) Preferably, a seal is effected between flapper sealing rings and the walls of the production string tubing; allowing formation gas pressure to push plunger with captured detachable valve member upward thereby pushing liquid above plunger towards top of production string tubing; drawing off liquid and piping out gas as plunger reenters lubricator thereby reducing pressure below plunger allowing detachable valve member and plunger to fall back down production string tubing repeating steps e) through j) without shutting in well.

- (Col 6, Lines 22-37) Referring to FIGS. 3 and 4, the seal is preferably oversized in relation to the production tubing to insure a positive seal. FIG. 3 illustrates the shape of the sealing membrane 45 during the downward fall as it curls against the wall of the production tubing 55. The oversizing causes the seal to partially curl. The curl is a major attribute of this feature of the invention. The pressure on the inside of the curl of the sealing membrane 45 pushes equally against all of the membrane 45 including the very edge portion which is in contact with the production tubing wall 55. This contact and the pressure behind it makes the seal possible. FIG. 4 illustrates the shape of the sealing member 45 during the upward travel of the auto-cycling plunger 10 as the gas pressure under the sealing member 45 causes a domed shape.

In order for the plunger disclosed in the '923 Patent to function properly, the resilient sealing rings of the subject plunger must form a pressure seal against the inner surface of the pipe. Such seal allows down-hole formation pressure to accumulate below the tool and force said tool up the well. Without a pressure seal, the subject tool would not work. And the inclusion of notches in the resilient sealing rings would prevent the necessary sealing action.

Moreover, use of sealing rings such as those disclosed in the '923 Patent would render the present invention ineffective. Unlike the sealing rings of the '923 Patent, the resilient wiper elements of the present invention must not seal against the internal surface of wet pipe. In order to function properly, a pipe wiping tool employing the resilient wiper elements of the present invention must fall within the pipe being wiped. However, if the resilient wiper elements of the present invention create a seal, then the tool will not fall and, importantly, will not wipe the internal surfaces of the pipe. It should be noted that the '923 Patent contemplates the plunger falling within a well, but (unlike a pipe

wiper employing the wiping elements of the present invention) the sealing rings of the plunger must not wipe the internal pipe surfaces during such descent; such wiping action in the downward direction would force wellbore fluids into the formation, which would have a very negative impact on the production capacity of the well. Instead, the plunger and sealing elements of the '923 Patent do not wipe the inside of the pipe in the downward direction but, rather, wipe only in the upward direction.

2. Applicant has amended Claim 4 to make it in independent form. Applicant respectfully asserts that said Claim 4, as amended, is allowable. Further, because dependent Claims 5 through 7 depend on independent Claim 4, Applicant respectfully avers that such dependent claims are also allowable.

3. As to Claim 6, as amended, Applicant respectfully notes that the '923 Patent does not contemplate a washer or other rigid member being integrally molded in the wiper element. The '923 Patent expressly states that “[t]he flexible sealing membrane 45 is fixably attached in a vulcanizing process to the metallic inner ring 43.” (Col. 5, Lines 62-64). Applicant respectfully avers that attaching a metal ring to an elastomer using a “vulcanization process” is not the same as, or suggestive of, integrally molding a washer within an elastomer.

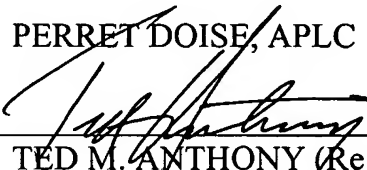
The Examiner is respectfully invited to contact Applicant's representative, Ted M. Anthony, by telephone at (337) 262-9000 or facsimile at (337) 262-9001, if the Examiner has any questions concerning the subject application or this response.

Respectfully submitted:

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By: _____


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